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which metering apertures **62, 64** are in the full open position (one end of the drive stroke) with the metering apertures **62** and **64** vertically aligned to permit maximum flow of the articles from the stream through the apertures and into the chute **42**. It should be noted that since the elongated metering apertures **62, 64** are oriented diagonally and in laterally overlapping relationship, articles are taken rather uniformly across the entire width of the article stream including the side edges. It should be noted that the end **48** of the lower metering gate element **46** extends only a short distance outward from the side of the bed.

FIG. 8 illustrates the condition in which the metering apertures **62, 64** are partially open (middle of the stroke) with the metering apertures being partially vertically aligned to remove articles from wide segments of the wide swath because of the diagonal orientation of the elongated apertures **62, 64**. It should be noted that the ends **48** and **50** of the lower metering gate element **46** do not extend outward from either side of the bed **16**.

FIG. 7 illustrates the condition in which the metering apertures **62, 64** are fully closed (opposite end of the stroke) with the apertures being fully misaligned to prevent flow of the articles therethrough. It should be noted that the end **50** extends only a short distance from the side of the bed **16**. It should be further noted that the stroke of the gate drive **78** is only approximately one-half of the interval distance between the apertures **62, 64** independently of the width of the bed **16**. For example, if the lateral center-to-center distance between the apertures is twelve inches, then the stroke distance may be approximately six inches. This relationship exists independently of whether the stream width between the bed sides **22, 24** is twenty-four inches or seventy-two inches. Consequently, a very short stroke is able to meter articles across substantially the full width of the article stream. Such a configuration provides for a very accurate metering of the articles, more uniformly across the full width of the bed without enlarging the effective width of the bed **16**.

In compliance with the statute, the invention has been described in language more or less specific as to structural and methodical features. It is to be understood, however, that the invention is not limited to the specific features shown and described, since the means herein disclosed comprise preferred forms of putting the invention into effect. The invention is, therefore, claimed in any of its forms or modifications within the proper scope of the appended claims appropriately interpreted in accordance with the doctrine of equivalents.

I claim:

1. A vibratory distributor for receiving bulk articles and conveying such bulk articles in an article stream past a plurality of metering gate stations for selectively metering and diverting bulk articles from the stream at one or more of the metering stations, comprising:

an elongated conveyor bed extending to the plurality of metering gate stations for receiving and supporting the bulk articles;

a vibratory drive operatively connected to the conveyor bed for vibrating the conveyor bed to convey the bulk articles in the stream having a wide swath between sides of the conveyor bed in a flow direction to the plurality of metering gate stations;

a metering gate assembly at each of the metering gate stations for selectively metering and diverting bulk articles from the stream across the wide swath;

each said metering gate assembly having two substantially horizontal, overlying metering gate elements in

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which the elements have complementary metering apertures formed therein that permit the bulk material to be diverted and pass therethrough when the apertures are vertically aligned and to prevent the bulk material from passing therethrough when the apertures are vertically misaligned;

wherein at least one of the metering gate elements is horizontally moveable relatively to the other metering gate element transverse to the article flow direction between an open aligned position to meter bulk articles therethrough and a closed misaligned position to prevent the passage of bulk articles therethrough; and

wherein the metering apertures of each metering gate elements are arranged with a segment of each aperture laterally overlapping an adjacent aperture to permit diverting bulk, articles across the wide swath of the stream.

2. The vibratory distributor as defined in claim 1 wherein the metering apertures are oriented at a diagonal angle to the article flow direction.

3. The vibratory distributor as defined in claim 2 wherein each of the metering apertures are oriented at a diagonal angle of between 35 and 60 degrees relative to the article flow direction.

4. The vibratory distributor as defined in claim 1 wherein each of the metering apertures has a preset transverse width and wherein the metering apertures of each of the metering gates are laterally spaced at center-to-center intervals between the sides of the bed that are equal to or greater than the transverse widths of the apertures.

5. The vibratory distributor as defined in claim 1 wherein each of the metering apertures have two substantially parallel side edges.

6. The vibratory distributor as defined in claim 5 wherein a majority of the metering apertures have elongated parallelogram shapes.

7. The vibratory distributor as defined in claim 6 wherein each of the elongated metering apertures is oriented at a diagonal angle of between 35 and 60 degrees relative to the article flow direction.

8. The vibratory distributor as defined in claim 1 wherein the metering gate assembly has a metering gate drive operatively connected to the at least one gate element for selectively moving the at least element transversely relative to the article stream flow between the open aligned position and the closed misaligned position.

9. The vibratory distributor as defined in claim 8 wherein the metering gate drive has a vibration dampening drive connection operatively connected to the at least one gate element for selectively moving the at least one gate element while minimizing vibration transfer to the gate drive.

10. The vibratory distributor as defined in claim 1 wherein the metering gate elements define an upper metering gate element that forms a segment of the bed at the gate station and a lower metering gate element that is moveable transversely to the article stream flow direction below the upper metering gate element to align and misalign the element metering apertures.

11. The vibratory distributor as defined in claim 10 wherein the metering gate assembly include a gate element drive that is vibrationally isolated from the conveyor bed and operatively connected to the lower metering element to selectively move the lower metering gate element transversely to the article stream flow between the open aligned position and the closed misaligned position to selectively meter bulk articles from the stream at the metering gate stations.